

Weather Probabilities for this Winter and Next Summer by J. Cecil Alter

WILL this winter be a severe one to offset the exceptionally warm summer just closed? And "will next summer be wet to make up for the unusual drought of 1910?"

Hundreds of times in the past few months the weather bureau has had to reply that it does not know. It can tell about 90 per cent of the time what the weather will be a few days ahead, but it frankly admits that it knows absolutely nothing about the action of storms that have not yet been formed.

This ignorance has sometimes been defiantly supplanted by fantastic forecasts of various sorts, but since, of these, the "warmers" seem no more numerous than the "colder," and the "wets" just about equal the "drys," the public, like the weather bureau, will have to wait and see for itself, whether there will be a hot time in the old town all winter, and whether prohibition will prevail on the arid farms next summer.

The weather bureau can tell in accurate figures what the weather has been in practically every nook and corner of the state; in fact the greater part of its equipment and effort are for this very purpose. It states precisely that the spring, summer, and autumn of 1910 were the warmest seasons Utah has known in 29 years; March being by a great deal the mildest and quietest March on record. The bureau also states that, throughout Utah, as a rule, from January to December, the amount of precipitation averaged about one-fourth deficient, and that during the growing season moisture was even more deficient. But the bureau will not even venture a guess on the weather for the future any farther than it can actually see with its telegraphic eyes, which is a few days, at most.

SIGNS OF THE TIMES.

Only an animal, with a "weather sense" (probably a rheumatic knee) can write precise weather history that has not yet occurred.

Word comes from Cache county in no uncertain terms that the winter will be severely cold because a toad-hole was found that was more than a foot

deeper than usual. Supporting this "forecast," the state game warden reports excessive activities among the beavers of the state. From this information, the nature fakery assure us we have an incontrovertible demonstration of a hard winter, for the beaver always builds his winter dams and houses earlier preceding hard winters.

From the Salt Lake valley we learn that mole's nests have been discovered with very little food in them, indicating beyond question that the mole is predicting a mild, open winter, and sees no necessity for having a quantity of stale worms in storage.

In Utah county a reputable ground hog (alias hedgehog) has stopped the hog hole of his den, thus telling the public that this winter's storms will blow, and rain, into his south door. The logical inference is that the winter, unlike the ground hog's south hole, will be "open."

Over in Summit county a bear has stored a large quantity of food, anticipating a long winter's confinement in the cold; but from this same district comes the report of numerous bear tracks on the snow late this fall, which, according to the future fakers' legend, means that this year is expecting an open, mild winter.

Both of these legends are beautiful ones, and because of their advantage and interest to posterity, it may be unkind to publish them together, conflicting as they do. But who knows? maybe the "warm weather" bear has been away from home all summer and is thus late gathering his Christmas nuts; or, it may be that the bear with the large supply of provisions did not realize how seriously he was misleading us when he stole his neighbor's food.

A report from Sanpete county states that coyotes killed so many turkeys (evidently anticipating famine times this winter) that the Thanksgiving "turkey" was a goose, and the breakfast supply of provisions did not realize how seriously he was misleading us when he stole his neighbor's food.

To all these legends, beliefs, and forecasts (with human interpretations), those persons who are by profession "weather worms" are lenient and charitable—because of their mere folklore interest, however.

RECORDS DO NOT LIE.

The proof of the weather forecast

is in its verification, and the man who, year after year, keeps records, sheets changed, and the clocks wound, on the unbiased weather-record instruments, is forced to discard these (there are none for the winter), calling that such things as "goose-bones" have no significance to anyone who does not wear one.

There are weather records at more than five thousand places in the United States; and in other countries there are probably ten thousand more. Those in the United States range in length from a few years to nearly a century; and there are records in the old world three or more centuries long. Yet, from the most persistent and careful study of all these records, the meteorologist frankly admits that he cannot find any reason or cause for the expectation of any definite kind of season in the future; the March hare may be "madder" than usual, and the March lion and the March lamb may lie down together. We are not permitted to know any more than we are permitted to know which way the "doubtful" election votes will be registered—until they are counted.

Several eminent meteorologists have detected "cycles" of weather (returns to certain abnormal values at definite, rhythmic intervals) varying in length from a few days to a great many years; but in every case, the amount of the swing or oscillation (of amounts of precipitation or degrees of temperature) is so slight as to be observed in the much greater accidental changes. Therefore, these cycles are useless to commerce or agriculture.

EVERY NINETEEN YEARS.

A 35-year cycle has probably had a wider acquaintance among weather men, but it has so often failed being a true cycle, that the "palm branch" must be awarded to a nineteen-year period which, while showing failures about one-fifth of the time, has traced from the present drought (the drought in Utah was felt generally) back through the centuries of history through the droughts predicted (and verified) by Elisha and Elijah, to the drought predicted by Joseph to Pharaoh.

Hard frosts, severely injuring the citrus fruit crop in Florida, have been observed about every seventeen years.

Records at several places in Utah show the presence of a ten-year drought cycle for four droughts, 1910 being the closure of the last one.

An analysis of the records shows, however, that the sequences of droughts are not present previous to 1880, 1870 being an unusually wet year, 1860 being only slightly below the average, and about the same amount falling in 1850. A fact that is more to the point in answering the queries as to the coming season, is that between the dry year and the closing of the drought cycles, we find other dry years scattered quite heterogeneously.

The average precipitation for Salt Lake City for 60 years is about fifteen inches. On account of the slight question as to the accuracy of the record previous to 1874 the weather bureau discards these and computes a normal for the subsequent years of about sixteen inches. This does not fit into any cycle. In 1872 we had a dry year, and also one in 1887, 1895 and 1903 which do not fit observed cycles, showing that a dry year is probable any time.

But how have the wet years been ushered in? haven't they always been preceded by dry years, like this one? Let us see.

WETTEST AND DRIEST.

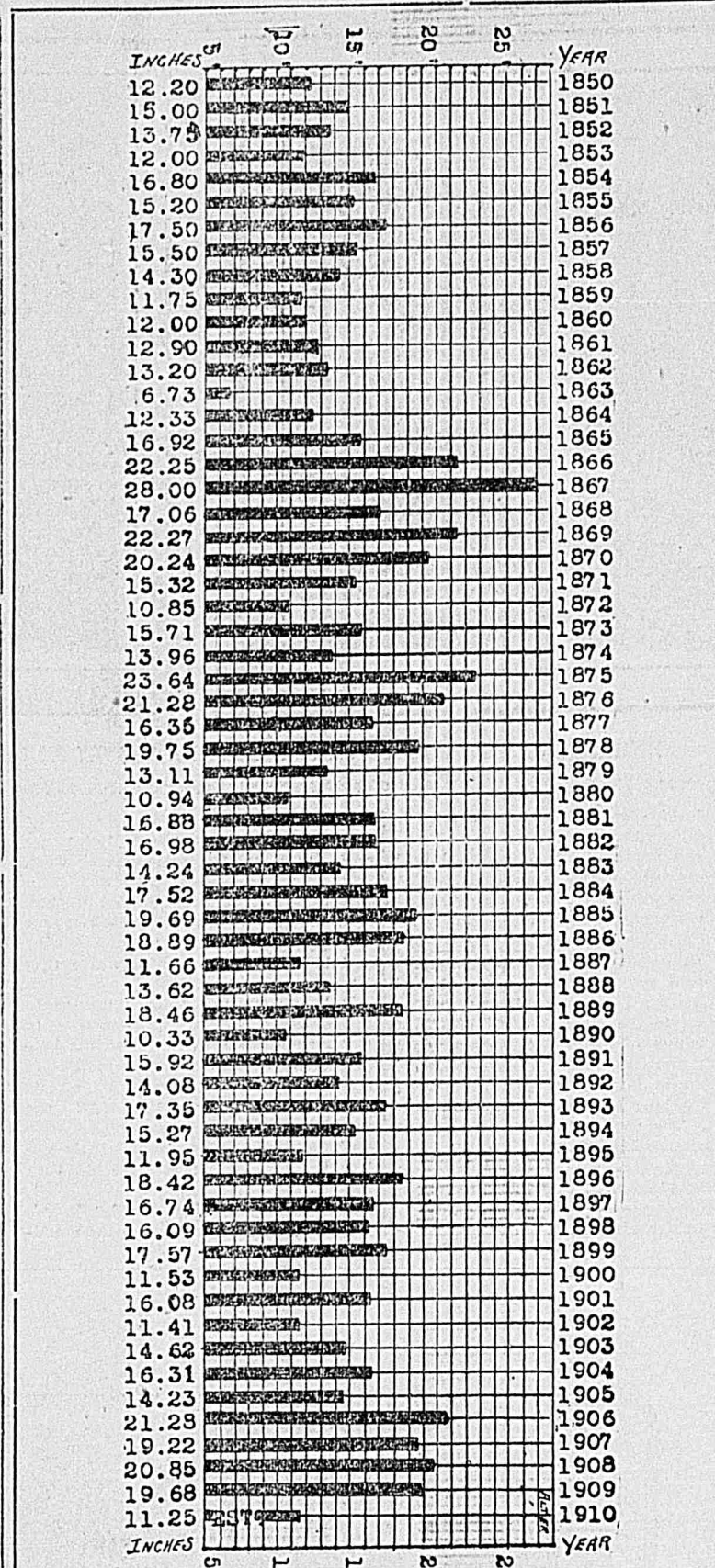
The wettest year on record was 1867, when the pioneers measured 28 inches of precipitation, according to the files of the Deseret News. And it may be of interest in passing to note that the following year the lake was 10 feet 6 inches higher than it is at present as a result of this excessive precipitation.

The driest year, 1862, was followed in 1864 by an amount slightly below the average, and in 1865 by an amount only slightly above average. The next year, 1866, the amount was 22 inches, which proves to have been the greatest, with three exceptions, in the entire 60 years of Utah's history, thus making betting on guessing decidedly in favor of less precipitation in 1867. This year was, however, contrary to all reasonable expectations, the wettest on record.

The year 1872 was of the nature of a drought, yet it was followed by two years that averaged below normal; and the same general condition is noted following the drought of 1895, the extreme drought of 1887 was followed by a year that was deficient about one-fourth. After the drought of 1890 there were 14 years with an average of less than normal precipitation; during this time, however, the annual amount fell three times to, or below, the estimated amount for 1910, though deficiencies continued to follow until 1906, when the amount suddenly increased to almost a half more than the average of the 14 preceding years. Then followed three years in succession of excessive precipitation, averaging about one-fourth more than normal. It was therefore but an evidence of the extreme vagaries of the weather for the 1910 precipitation to drop to the value of a drought.

FARMERS' VIEWPOINT.

To add to the intricacy of the problem of pre-determining for agricultural purposes the amount of precipitation for any coming season, an occasional calendar year may be one which really has an excess, while the crop season proper may be droughty, as has been the case a few times. Again a calendar year with a deficiency may have an ex-



SIXTY YEARS' PRECIPITATION AT SALT LAKE CITY.

(The record prior to 1874 is mostly from Marcus E. Jones's revision of the data kept throughout the pioneer days by W. W. Phelps, and his son and successor, H. E. Phelps, all of which were regularly published, together with other weather notes, in The Deseret News, since 1874 the record is by the weather bureau.)

cess during the crop season, the remainder making up the deficient part of the year. Thus a wet year becomes a dry one, and a dry one wet, from the farmers' viewpoint.

To say definitely what next year will bring is impossible. It may be wet, and it may continue dry; there is no more telling than there is in telling whether the next person you meet will have gray eyes or brown. By placing a number of long weather records side by side one can establish forecast rules and sequence systems that will rival the rules of Greek music writing for intricacy and interest but they will be of far less value to the farmer. It is just as if we had thrown a handful of peas on the floor, and attempted to establish rules of systematic location for the scattered peas.

The oscillations of the weather are a splendid example of the "law" of chance, which is no law at all, in fact the very absence of all law. Wet years and cold winters are arranged in history with about the same system of regularity as is the letter "r" on this page.

The mildest winters are preceded as often by warm summers as by cold ones, a great many following "average" summers; the same lack of law is noted with regard to the severest winters. It is also noticeable that a very cold winter (1883, 1884 and 1903) may precede a warm summer, but that very cold winters (1880 and 1893) may also precede cool summers.

The summer of 1910 was the warmest on record, and it may look like a safe bet that this winter will be cold; but it is better to bet for "place" on a

lers, have been introduced to damp the stamps, but in nearly every office they are neglected, and the same old process of licking the stamps goes on. The postmaster-general thoughtfully supplied the counters of postoffices with damp pads but nobody used them, and the counter clerks, observing that the pads were rarely used saved themselves the trouble of dampening them.—Dublin Times.

CHINA'S WAR ON THE POPPY.

From Shansi there now comes a pathetic tale of extreme poverty leading to law-breaking, and the consequent punishment. In the region north of Pen-Chou-Fu (Shansi), the people are very poor. When they planted wheat, the income from their small farms was not sufficient for the year's expenses. They knew that if they planted the poppy, their income would be greater. They also knew that it was against the law, as the Chinese government is fighting the opium traffic; but in their straits they decided that they must grow opium. So they banded together, thinking if every one planted it, the authorities could not do much in punishing them. They started planting and retribution followed quickly. An official with 100 soldiers went to the village and shot down 39 men, and told the rest he would be back to do the same to them if the poppy were allowed to grow.—Christian Herald.

PERFECT PEACE.

The shivering carolers had just selected a pitch beneath a lamp in a back street, when a small boy emerged from a house opposite and beckoned mysteriously to their leader.

"Mother says you're to sing something loud," he whispered. "That bit about 'Peace on earth' will do fine! She don't want no others. Just you go on hollering 'Peace on earth'!"

For ten minutes the willing minstrels yelled their loudest. Then a little woman, armed with a copper saucapan, appeared upon the scene. "Thank!" she said, handing the collector three pence. "That 'Peace on earth' is done it beautiful! My old man went to fetch the turkey 'e won in a raffle tonight, an' 'e says 'e made one or two calls and lost it, so 'e've been a-teachin' 'im to be more careful, an' I didn't want none of the neighbors to interfere when 'e 'ollered out."—Pearson's Weekly.

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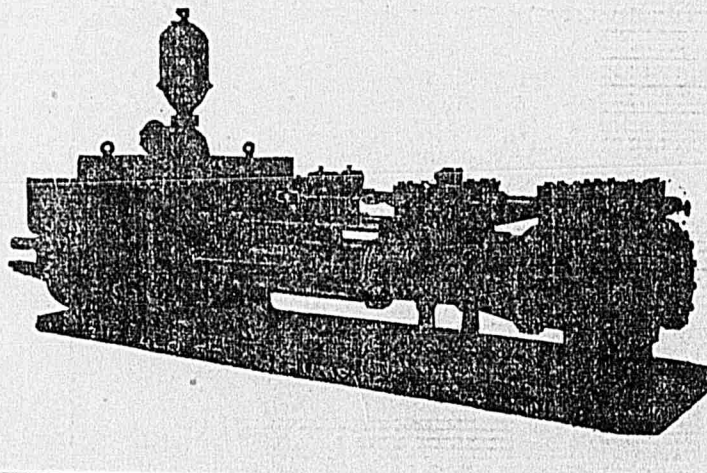
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